REMARKS

The Office Action dated May 9, 2006 has been received and carefully noted. The above amendments to the claims and the following remarks are submitted as a full and complete response thereto.

Claims 1 and 4-7 are amended to particularly point out and distinctly claim the subject matter of the present invention. New claims 8-12 are added to further define the subject matter of the present invention. Entry of the amendments is respectfully requested because the amendments place the claims in better condition for appeal or allowance, do not require further search and/or consideration and do not contain new matter. Claims 1 and 4-7 are respectfully submitted for consideration.

The Office Action rejected claims 1, 4 and 6 under 35 U.S.C. 103(a) as being obvious over US Patent No. 6,530,032 to Shew et al. (Shew). The Office Action took the position that Shew disclosed all of the features of these claims except for the feature that the routing is continued until there is no need to rout again. The Office Action asserted that is obvious to one skilled in the art that a "finding paths algorithm" would continue finding paths until paths are eventually found. Applicants respectfully submit that Shew fails to disclose or suggest all of the features recited in any of the pending claims.

Claim 1, from which claims 4-7 depend is directed to a method for forming protected routes. Several functional layers are routed from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation. Starting from the layer above the bottom layer and finishing when the top layer is routed into the

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layer below the top layer, each routing in turn taking into account the protection demands, and taking into account the routing possibilities in the layer below. Each route includes two separate paths in a communications network, which includes several functional layers on top of one another, each layer forming demands for protected routes in the layers below. After each routing of the layer under formation, the protection demands are assessed and the routings of the layers below are changed in a way that the first below layer is routed first again, and the second below layer is routed second. The routing is continued until there is no need to route again and the protection demands are met.

According to certain embodiments the present invention is directed to forming protected routes by routing layers while taking into account protection demands. Applicants respectfully submit that each of the pending claims recite features that are neither disclosed nor suggested in Shew.

Shew is directed to a method of providing fault recovery including the steps of aligning at least a first and second layer of a plurality of communications layers, for a given path in the first layer, defining a corresponding path in the second layer and an alternative path in the second layer, the alternative path in the second layer corresponding to an alternative path in the first layer disjoint from the given path, and on detection in the first layer of a fault in the given path, switching in the second layer from the corresponding path to the alternative path, whereby fault recovery in the network is provided. Shew further describes corresponding paths are provided in a logic layer and a

physical layer, and when a fault is detected in the physical layer an alternative path is selected in the logic layer corresponding to an alternative path in the physical layer. Thus, Shew is not related to a method of forming protected routes, but rather is related to a method of fault recovery in a communications network in which protected routes are already provided. Thus, Shew discloses a method of fault recovery in which a new route or a connection is found when a fault occurs.

Applicants respectfully submit that Shew fails to disclose or suggest at least the feature of routing several functional layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top layer, each routing in turn taking into account protection demands, and taking into account the routing possibilities in the layer below, as recited in claim 1.

Shew merely discloses an algorithm for finding an alternate route when a fault occurs. Shew fails to mention, disclose or suggest that the original path was formed by taking into account protection demands, as recited in claim 1.

Applicants respectfully submit that because claims 4 and 6 depend from claim 1, these claims are allowable at least for the same reasons as claim 1, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that claims 1 and 4-7 recite features that are neither disclosed nor suggested in Shew. Accordingly, withdrawal of the rejection of claims 1, 4 and 6 under 35 U.S.C. 103(a) is respectfully requested.

The Office Action rejected claims 5 and 7 under 35 U.S.C. 103(a) as being obvious over Shew, in view of US Patent No. 6,704,320 to Narvaez et al. (Narvaez). The Office Action took the position that Shew disclosed all of the features recited in these claims except for the feature of providing each transmission line having a weight describing the length of the transmission line and calculating new heights in order to find a new shortest route. The Office Action asserted that Narvaez disclosed this feature. Applicants respectfully submit that the cited references, taken individually or in combination, fail to disclose or suggest all of the features recited in any of the pending claims. Specifically, Shew is deficient at least for the same reasons discussed above and Naraez fails to cure these deficiencies.

Shew is discussed above. Narvaez is directed to a shortest path tree (SPT) algorithm for a router determines a new SPT for a root node in response to a link-state or other network topology change. The dynamic SPT algorithm determines the new SPT as an optimization problem in a linear programming framework based in an existing SPT in the router. The dynamic SPT algorithm emulates maximum decrement of a ball and string model by iteratively selecting nodes of the existing SPT for consideration and update of parent node, child nodes, and distance attributes based on the maximum decrement. For the maximum decrement, a node in the existing SPT is selected by each iteration based on the greatest potential decrease (or least increase) in its distance attribute. The ball and string model that may be employed for the dynamic SPT algorithm represents a network of nodes and links with a ball representing a node and a string representing a link or edge.

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The length of a string is defined by its link's weight. The set of strings connecting the balls defines a path between the root node and a particular node. The shortest path is the path defined by the strings from a root node to a particular node that are tight. For the dynamic SPT algorithm, an increase (or decrease) in an edge weight in an existing SPT corresponds to a lengthening (or shortening) of a string. By sequentially pulling balls away in a single direction from the ball of the root node, the new SPT becomes defined by the balls and tight strings. However, Naraez fails to disclose or suggest at least the feature of routing several functional layers from bottom to up in a way that the layer under formation is routed into the layer below the layer under formation, starting from the layer above the bottom layer, and finishing when the top layer is routed into the layer below the top layer, each routing in turn taking into account protection demands, and taking into account the routing possibilities in the layer below, as recited in claim 1. Thus, Naraez fails to cure the deficiencies of Shew.

Based at least on the above, Applicants respectfully submit that the cited references taken individually or in combination, fail to disclose or suggest all of the features recited in claims 5 and 7. Accordingly, withdrawal of the rejection of claims 5 and 7 under 35 U.S.C. 103(a) is respectfully requested.

New claims 8-12 are added. Applicants respectfully submit that claims 8-12 recited features that are not disclosed or suggested in the cited references.

Applicants respectfully submit that each of claims 1, 4-12 recite features that are neither disclosed nor suggested in the cited references. Accordingly, Applicants

respectfully request that each of claims 1 and 4-12 be allowed and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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